AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions and listings of claims in the application.

LISTING OF CLAIMS

1. (Previously Presented) A wireless Ethernet network device with active and low power modes, comprising:

a first voltage regulator that regulates supply voltage during the active mode and that is powered down during the low power mode;

a second voltage regulator that dissipates less power than said first voltage regulator and that regulates supply voltage during the low power mode;

a medium access controller (MAC) device that selects said first voltage regulator during the active mode and said second voltage regulator during the low power mode, wherein the wireless Ethernet network device at least one of transmits and receives data during the active mode.

2. (Original) The wireless Ethernet network device of Claim 1 further comprising a baseband processor (BBP) that performs radio frequency mixing and that communicates with said MAC device.

3. (Original) The wireless Ethernet network device of Claim 2 wherein at least one of said first and second voltage regulators is located in said BBP.

4. (Original) The wireless Ethernet network device of Claim 2 further comprising a first phase locked loop (PLL) that generates a first clock signal for said BBP during the active mode.

5. (Original) The wireless Ethernet network device of Claim 4 wherein said first PLL is located in said BBP.

6. (Original) The wireless Ethernet network device of Claim 4 further comprising a crystal oscillator that outputs a timing signal to said first PLL during the active mode.

7. (Original) The wireless Ethernet network device of Claim 6 further comprising a radio frequency (RF) transceiver that transmits and receives wireless signals, that communicates with said BBP and that includes a second PLL that receives said timing signal from said crystal oscillator during the active mode and that generates a second clock signal for said RF transceiver.

8. (Original) The wireless Ethernet network device of Claim 7 further comprising a first oscillator that generates a third clock signal during the low power mode, wherein said first oscillator dissipates less power than said crystal oscillator.

9. (Original) The wireless Ethernet network device of Claim 1 wherein when said MAC device initiates the low power mode, said first voltage regulator is shut down.

10. (Original) The wireless Ethernet network device of Claim 7 wherein when said MAC device initiates the low power mode, said RF transceiver is shut down.

11. (Original) The wireless Ethernet network device of Claim 7 wherein when said MAC device initiates the low power mode, said first and second PLL are shut down.

12. (Original) The wireless Ethernet network device of Claim 7 wherein when said MAC device initiates the low power mode, said crystal oscillator is shut down.

13. (Original) The wireless Ethernet network device of Claim 8 wherein said MAC device includes a counter and wherein when said MAC device initiates the low power mode, said second voltage regulator powers said first oscillator and said counter.

14. (Original) The wireless Ethernet network device of Claim 13 wherein when said counter reaches a predetermined count, said MAC device powers up at least two of said crystal oscillator, said first voltage regulator, said RF transceiver, said first PLL and said second PLL.

15. (Original) The wireless Ethernet network device of Claim 1 wherein said wireless Ethernet network device is operated in an infrastructure mode.

16. (Original) The wireless Ethernet network device of Claim 1 wherein said wireless Ethernet network device is operated in an ad hoc mode.

17. (Original) The wireless Ethernet network device of Claim 7 wherein said MAC device includes an external interface and wherein when said MAC device receives a wake up signal from a host via said external interface, said MAC device powers up at least two of said crystal oscillator, said first voltage regulator, said RF transceiver and said first and second PLL.

18. (Currently Amended) A wireless Ethernet network device with active and low power modes, comprising:

a first voltage regulator that regulates supply voltage during the active mode and that is powered down during the low power mode;

a second voltage regulator that dissipates less power than said first voltage regulator and that regulates supply voltage during the low power mode;

a medium access controller (MAC) device that selects said first voltage regulator during the active mode and said second voltage regulator during the low power mode;

a baseband processor (BBP) that performs radio frequency mixing and that communicates with said MAC device;

a first phase locked loop (PLL) that generates a first clock signal for said BBP during the active mode; and

a crystal oscillator that outputs a timing signal to said first PLL during the active mode,

wherein said MAC device powers down said first PLL before shutting down said first voltage regulator and said crystal oscillator.

19. (Original) The wireless Ethernet network device of Claim 6 wherein said crystal oscillator is an external crystal oscillator (XOSC).

20. (Original) The wireless Ethernet network device of Claim 6 wherein said crystal oscillator includes an external crystal and an amplifier that is integrated with one of said MAC device, said BBP, and said RF transceiver.

21. (Original) The wireless Ethernet network device of Claim 1 wherein said MAC device includes transmit and receive state machines and a transmit buffer and wherein said MAC device initiates said low power mode when said transmit buffer is empty and said transmit and receive state machines are idle.

22. (Original) The wireless Ethernet network device of Claim 1 wherein said wireless Ethernet network device dissipates less than 2mW when in said low power mode.

23. (Original) The wireless Ethernet network device of Claim 6 further comprising a processor that communicates with said crystal oscillator and that calibrates said first oscillator using said timing signal from said crystal oscillator.

24. (Original) The wireless Ethernet network device of Claim 8 wherein said first oscillator is located in said BBP.

25. (Original) The wireless Ethernet network device of Claim 8 wherein at least two of said BBP, said first voltage regulator, said second voltage regulator, said RF transceiver, said MAC device, and said first PLL are implemented by a system on chip (SOC).

26. (Previously Presented) A baseband processor for a wireless Ethernet network device with active and low power modes, comprising:

a first voltage regulator that regulates supply voltage during the active mode and that is powered down during the low power mode; and

a second voltage regulator that dissipates less power than said first voltage regulator, and that regulates supply voltage during the low power mode, wherein the wireless Ethernet network device at least one of transmits and receives data during the active mode.

27. (Original) The baseband processor of Claim 26 wherein said baseband processor receives a power mode select signal from a medium access controller.

28. (Original) The baseband processor of Claim 26 further comprising a first phase locked loop (PLL) that generates a first clock signal for said BBP during the active mode and that is powered down during the low power mode.

29. (Original) The baseband processor of Claim 28 wherein said first PLL receives a timing signal from a crystal oscillator during the active mode.

30. (Original) The baseband processor of Claim 29 further comprising a first oscillator that generates a second clock signal during the low power mode, wherein said first oscillator dissipates less power than the crystal oscillator.

31. (Previously Presented) A wireless Ethernet network device with active and low power modes, comprising:

first regulating means for regulating supply voltage during the active mode and that is powered down during the low power mode;

second regulating means, which dissipates less power than said first regulating means, for regulating supply voltage during the low power mode;

selecting means for selecting said first regulating means during the active mode and said second regulating means during the low power mode, wherein the wireless Ethernet network device at least one of transmits and receives data during the active mode.

32. (Original) The wireless Ethernet network device of Claim 31 further comprising baseband (BB) processing means for performing radio frequency mixing and for communicating with said selecting means.

33. (Original) The wireless Ethernet network device of Claim 32 wherein at least one of said first and second regulating means is located in said BB processing means.

34. (Original) The wireless Ethernet network device of Claim 32 further comprising first phase locked loop (PLL) means for generating a first clock signal for said BB processing means during the active mode.

35. (Original) The wireless Ethernet network device of Claim 34 wherein said first PLL means is located in said BB processing means.

36. (Original) The wireless Ethernet network device of Claim 34 further comprising crystal oscillating means for outputting a timing signal to said first PLL means during the active mode.

37. (Original) The wireless Ethernet network device of Claim 36 further comprising radio frequency (RF) transceiver means for transmitting and receiving wireless signals, that communicates with said BB processing means and that includes a second PLL means for receiving said timing signal from said crystal oscillating means

during the active mode and for generating a second clock signal for said RF transceiver means.

38. (Original) The wireless Ethernet network device of Claim 37 further comprising first oscillating means for generating a third clock signal during the low power mode, wherein said first oscillating means dissipates less power than said crystal oscillating means.

39. (Original) The wireless Ethernet network device of Claim 31 wherein when said selecting means initiates the low power mode, said first regulating means is shut down.

40. (Original) The wireless Ethernet network device of Claim 37 wherein when said selecting means initiates the low power mode, said RF transceiver means is shut down.

41. (Original) The wireless Ethernet network device of Claim 37 wherein when said selecting means initiates the low power mode, said first and second PLL means are shut down.

42. (Original) The wireless Ethernet network device of Claim 37 wherein when said selecting means initiates the low power mode, said crystal oscillating means is shut down.

43. (Original) The wireless Ethernet network device of Claim 38 wherein said selecting means includes counting means for counting and wherein when said selecting means initiates the low power mode, said second regulating means powers said first oscillating means and said counting means.

44. (Original) The wireless Ethernet network device of Claim 43 wherein when said counting means reaches a predetermined count, said selecting means powers up at least two of said crystal oscillating means, said first regulating means, said RF transceiver means, said first PLL means, said BB processing means and said second PLL means.

45. (Original) The wireless Ethernet network device of Claim 31 wherein said wireless Ethernet network device is operated in an infrastructure mode.

46. (Original) The wireless Ethernet network device of Claim 31 wherein said wireless Ethernet network device is operated in an ad hoc mode.

47. (Original) The wireless Ethernet network device of Claim 37 wherein said selecting means includes an external interface and wherein when said selecting means receives a wake up signal from a host via said external interface, said selecting means powers up at least two of said crystal oscillating means, said first regulating means, said RF transceiver means and said first and second PLL means.

48. (Previously Presented) A wireless Ethernet network device with active and low power modes, comprising:

first regulating means for regulating supply voltage during the active mode and that is powered down during the low power mode;

second regulating means, which dissipates less power than said first regulating means, for regulating supply voltage during the low power mode;

selecting means for selecting said first regulating means during the active mode and said second regulating means during the low power mode;

baseband (BB) processing means for performing radio frequency mixing and for communicating with said selecting means;

first phase locked loop (PLL) means for generating a first clock signal for said BB processing means during the active mode; and

crystal oscillating means for outputting a timing signal to said first PLL means during the active mode,

wherein said selecting means powers down said first PLL means before shutting down said first regulating means and said crystal oscillating means.

49. (Original) The wireless Ethernet network device of Claim 36 wherein said crystal oscillating means is an external crystal oscillator (XOSC).

50. (Original) The wireless Ethernet network device of Claim 36 wherein said crystal oscillating means includes an external crystal and an amplifier that is

integrated with one of said selecting means, said BB processing means, and said RF transceiver means.

51. (Original) The wireless Ethernet network device of Claim 31 wherein said selecting means includes transmit and receive state machines and a transmit buffer and wherein said selecting means initiates said low power mode when said transmit buffer is empty and said transmit and receive state machines are idle.

52. (Original) The wireless Ethernet network device of Claim 31 wherein said wireless Ethernet network device dissipates less than 2mW when in said low power mode.

53. (Original) The wireless Ethernet network device of Claim 36 further comprising processing means that communicates with said crystal oscillating means for calibrating said first oscillating means using said timing signal from said crystal oscillating means.

54. (Original) The wireless Ethernet network device of Claim 38 wherein said first oscillating means is located in said BB processing means.

55. (Original) The wireless Ethernet network device of Claim 38 wherein at least two of said BB processing means, said first regulating means, said second regulating means, said RF transceiver means, said selecting means, and said first PLL means are implemented by a system on chip (SOC).

56. (Previously Presented) A baseband processor for a wireless Ethernet network device with active and low power modes, comprising:

first regulating means for regulating supply voltage during the active mode and that is powered down during the low power mode; and

second regulating means, which dissipates less power than said first regulating means, for regulating supply voltage during the low power mode, wherein the wireless Ethernet network device at least one of transmits and receives data during the active mode.

57. (Original) The baseband processor of Claim 56 wherein said baseband processing device receives a power mode select signal from a medium access controller.

58. (Original) The baseband processor of Claim 56 further comprising first phase locked loop (PLL) means for generating a first clock signal for said processing means during the active mode and that is powered down during the low power mode.

59. (Original) The baseband processor of Claim 58 wherein said first PLL means receives a timing signal from a crystal oscillator during the active mode.

60. (Original) The baseband processor of Claim 59 further comprising a first oscillating means that generates a second clock signal during the low power mode, wherein said first oscillating means dissipates less power than the crystal oscillator.

61. (Previously Presented) A method for operating a wireless Ethernet network device with active and low power modes, comprising:

regulating supply voltage during the active mode using a first voltage regulator;

powering down said first voltage regulator during the low power mode; and

regulating supply voltage during the low power mode using a second voltage regulator, which dissipates less power than said first voltage regulator, wherein the wireless Ethernet network device at least one of transmits and receives data during the active mode.

62. (Original) The method of Claim 61 further comprising performing radio frequency mixing using a baseband (BB) processor.

63. (Original) The method of Claim 62 further comprising locating at least one of said first and second voltage regulators in said BB processor.

64. (Original) The method of Claim 62 further comprising generating a first clock signal for said BB processor during the active mode using a first phase locked loop (PLL).

65. (Original) The method of Claim 64 wherein said first PLL is located in said BB processor.

66. (Original) The method of Claim 64 further comprising generating a timing signal for said first PLL using a crystal oscillator during the active mode.

67. (Original) The method of Claim 66 further comprising:

transmitting and receiving wireless signals using a radio frequency (RF) transceiver that includes a second PLL; and

receiving said timing signal from said crystal oscillator at said second PLL during the active mode and generating a second clock signal for said RF transceiver.

68. (Original) The method of Claim 67 further comprising generating a third clock signal during the low power mode using a first oscillator, wherein said first oscillator dissipates less power than said crystal oscillator.

69. (Original) The method of Claim 61 further comprising shutting down said first voltage regulator when the low power mode is initiated.

70. (Original) The method of Claim 67 further comprising shutting down said RF transceiver when the low power mode is initiated.

71. (Original) The method of Claim 67 further comprising shutting down said first and second PLL when the low power mode is initiated.

72. (Original) The method of Claim 67 further comprising shutting down said crystal oscillator when the low power mode is initiated.

73. (Original) The method of Claim 68 further comprising powering said first oscillator using said first voltage regulator and starting a counter when the low power mode is initiated.

74. (Original) The method of Claim 73 further comprising powering up at least two of said crystal oscillator, said first voltage regulator, said RF transceiver, said first PLL, said BB processor and said second PLL when said counter reaches a predetermined count.

75. (Original) The method of Claim 61 wherein said wireless Ethernet network device is operated in an infrastructure mode.

76. (Original) The method of Claim 61 wherein said wireless Ethernet network device is operated in an ad hoc mode.

77. (Original) The method of Claim 67 further comprising powering up at least two of said crystal oscillator, said first voltage regulator, said RF transceiver, said first PLL, and second PLL when a wake up signal from a host is received.

78. (Previously Presented) A method for operating a wireless Ethernet network device with active and low power modes, comprising:

regulating supply voltage during the active mode using a first voltage regulator;

powering down said first voltage regulator during the low power mode;

regulating supply voltage during the low power mode using a second voltage regulator, which dissipates less power than said first voltage regulator;

generating a first clock signal for a BB processor during the active mode using a first phase locked loop (PLL);

generating a timing signal for said first PLL using a crystal oscillator during the active mode; and

powering down said first PLL before shutting down said first voltage regulator and said crystal oscillator.

79. (Original) The method of Claim 66 wherein said crystal oscillator is an external crystal oscillator (XOSC).

80. (Previously Presented) The method of Claim 66 wherein said crystal oscillator includes an external crystal and an amplifier and further comprising integrating said amplifier with one of a MAC device, said BB processor, and said RF transceiver.

81. (Previously Presented) The method of Claim 80 wherein said MAC device includes transmit and receive state machines and a transmit buffer and further comprising initiating said low power mode when said transmit buffer is empty and said transmit and receive state machines are idle.

82. (Original) The method of Claim 61 wherein said wireless Ethernet network device dissipates less than 2mW when in said low power mode.

83. (Original) The method of Claim 66 further comprising calibrating said first oscillator using said timing signal from said crystal oscillator.

84. (Original) The method of Claim 68 further comprising locating said first oscillator in said BB processor.

85. (Previously Presented) The method of Claim 68 further comprising implementing at least two of said BB processor, said first voltage regulator, said second voltage regulator, said RF transceiver, a MAC device, and said first PLL using a system on chip (SOC).

86. (Previously Presented) A method for operating a baseband processor for a wireless Ethernet network device with active and low power modes, comprising:

regulating supply voltage using a first voltage regulator during the active mode;

powering down the first voltage regulator during the low power mode; and

regulating supply voltage using a second voltage regulator, which dissipates less power than said first voltage regulator, during the low power mode, wherein the wireless Ethernet network device at least one of transmits and receives data during the active mode.

87. (Original) The method of Claim 86 further comprising receiving a power mode select signal from a medium access controller.

88. (Original) The method of Claim 86 further comprising:

generating a first clock signal using a first PLL during the active mode; and

powering down the first PLL during the low power mode.

89. (Original) The method of Claim 88 wherein said first PLL receives a timing signal from a crystal oscillator during the active mode.

90. (Original) The method of Claim 89 further comprising generating a second clock signal during the low power mode using a first oscillator that dissipates less power than the crystal oscillator.

91. (Currently Amended) A wireless device with active and low power modes, comprising:

an oscillator that generates a first reference frequency and a second reference frequency that is lower than said first reference frequency;

a radio frequency (RF) transceiver that communicates with said oscillator and that transmits and receives RF signals;

a baseband processor (BBP) that communicates with said oscillator and said RF transceiver and that performs RF mixing; and

a shutdown module that shuts down said BBP and said RF transceiver in said low power mode and transitions from said first frequency to said second frequency when transitioning from said active mode to said low power mode, and that operates said BBP and said RF transceiver in said active mode and transitions from said second frequency to said first frequency when transitioning from said low power mode to said active mode,

wherein a medium access control (MAC) device includes said shutdown module.

92. (Previously presented) The wireless device of Claim 91 wherein said oscillator includes a first oscillator that generates said first reference frequency and a

second oscillator that consumes less power than said first oscillator and that generates said second reference frequency.

93. (Cancelled)

94. (Previously presented) The wireless device of Claim 92 wherein said first oscillator includes a crystal oscillator and said second oscillator includes a semiconductor oscillator.

95. (Previously presented) The wireless device of Claim 91 further comprising a voltage supply that supplies a first voltage level during said active mode and a second voltage level during said low power mode.

96. (Previously presented) The wireless device of Claim 95 wherein said voltage supply includes a first voltage supply that supplies said first voltage level and a second voltage supply that supplies said second voltage level.

97. (Previously presented) The wireless device of Claim 95 wherein said shutdown module transitions from said first voltage level to said second voltage level when transitioning from said active mode to said low power mode and transitions from said second voltage level to said first voltage level when transitioning from said low power mode to said active mode.

98. (Previously presented) The wireless device of Claim 91 wherein said RF transceiver includes a first phase locked loop (PLL), and wherein said shutdown module shuts down said first PLL during said low power mode and operates said first PLL during said active mode.

99. (Currently Amended) The wireless device of Claim ~~91~~ 98 wherein said BBP includes a second PLL, and wherein said shutdown module shuts down said second PLL during said low power mode and operates said second PLL during said active mode.

100. (Previously presented) The wireless device of Claim 96 wherein said first voltage supply includes a first voltage regulator and said second voltage supply includes a second voltage regulator.

101. (Previously presented) The wireless device of Claim 92 wherein said shutdown module selectively calibrates said second reference frequency of said second oscillator using said first reference frequency of said first oscillator before transitioning to said low power mode.

102. (Previously presented) A system comprising the wireless device of Claim 91 and further comprising a remote device that periodically transmits a beacon, wherein said shutdown module transitions said wireless device from said low power mode to said active mode prior to receiving said beacon.

103. (Currently Amended) A wireless device with active and low power modes, comprising:

a voltage supply that supplies a first voltage level and a second voltage level that is less than said first voltage level;

a radio frequency (RF) transceiver that transmits and receives RF signals;

a baseband processor (BBP) that communicates with said RF transceiver and that performs RF mixing; and

a shutdown module that shuts down said BBP and said RF transceiver in said low power mode and transitions from said first voltage level to said second voltage level when transitioning from said active mode to said low power mode, and that operates said BBP and said RF transceiver in said active mode and transitions from said second voltage level to said first voltage level when transitioning from said low power mode to said active mode,

wherein a medium access control (MAC) device includes said shutdown module.

104. (Previously presented) The wireless device of Claim 103 wherein said voltage supply includes a first voltage supply that supplies said first voltage level and a second voltage supply that supplies said second voltage level.

105. (Cancelled)

106. (Previously presented) The wireless device of Claim 103 further comprising a first oscillator that communicates with said BBP and said RF transceiver, that receives said first voltage level and that generates a first reference frequency.

107. (Previously presented) The wireless device of Claim 106 further comprising a second oscillator that receives said second voltage level, that consumes less power than said first oscillator and that generates a second reference frequency.

108. (Previously presented) The wireless device of Claim 107 wherein said first oscillator includes a crystal oscillator and said second oscillator includes a semiconductor oscillator.

109. (Previously presented) The wireless device of Claim 103 wherein said RF transceiver includes a first phase locked loop (PLL), and wherein said shutdown module shuts down said first PLL during said low power mode and operates said first PLL during said active mode.

110. (Currently Amended) The wireless device of Claim ~~103~~ 109 wherein said BBP includes a second PLL, and wherein said shutdown module shuts down said second PLL during said low power mode and operates said second PLL during said active mode.

111. (Previously presented) The wireless device of Claim 104 wherein said first voltage supply includes a first voltage regulator and said second voltage supply includes a second voltage regulator.

112. (Previously presented) The wireless device of Claim 107 wherein said shutdown module selectively calibrates said second reference frequency of said second oscillator using said first reference frequency of said first oscillator before transitioning to said low power mode.

113. (Previously presented) A system comprising the wireless device of Claim 103 and further comprising a remote device that periodically transmits a beacon, wherein said shutdown module transitions said wireless device from said low power mode to said active mode prior to receiving said beacon.

114. (Currently Amended) A wireless device with active and low power modes, comprising:

a first oscillator that generates a first reference frequency;

a second oscillator that generates a second reference frequency that is lower than said first frequency;

a first voltage supply that supplies a first voltage level to said first oscillator;

a second voltage supply that supplies a second voltage level that is less than said first voltage level to said second oscillator; and

a shutdown module that shuts down said first oscillator in said low power mode and transitions from said first voltage level to said second voltage level when transitioning from said active mode to said low power mode, and that operates said first oscillator in said active mode and transitions from said second voltage level to said first voltage level when transitioning from said low power mode to said active mode, wherein the wireless device at least one of transmits and receives data during the active mode,

wherein a medium access control (MAC) device includes said shutdown module.

115. (Previously presented) The wireless device of Claim 114 further comprising:

a radio frequency (RF) transceiver that communicates with said first oscillator and that transmits and receives RF signals; and

a baseband processor (BBP) that communicates with said first oscillator and said RF transceiver and that performs RF mixing, wherein said shutdown module shuts down said RF transceiver and said BBP during said low power mode and operates said BBP and said RF transceiver during said active mode.

116. (Cancelled)

117. (Previously presented) The wireless device of Claim 114 wherein said first oscillator includes a crystal oscillator and said second oscillator includes a semiconductor oscillator.

118. (Previously presented) The wireless device of Claim 115 wherein said RF transceiver includes a first phase locked loop (PLL), and wherein said shutdown module shuts down said first PLL during said low power mode and operates said first PLL during said active mode.

119. (Currently Amended) The wireless device of Claim ~~115~~ 118 wherein said BBP includes a second PLL, and wherein said shutdown module shuts down said second PLL during said low power mode and operates said second PLL during said active mode.

120. (Previously presented) The wireless device of Claim 114 wherein said first voltage supply includes a first voltage regulator and said second voltage supply includes a second voltage regulator.

121. (Previously presented) The wireless device of Claim 114 wherein said shutdown module selectively calibrates said second reference frequency of said second oscillator using said first reference frequency of said first oscillator before transitioning to said low power mode.

122. (Previously presented) A system comprising the wireless device of Claim 114 and further comprising a remote device for periodically transmitting a beacon, wherein said shutdown module transitions said wireless device from said low power mode to said active mode prior to receiving said beacon.

123. (Previously Presented) A wireless device with active and low power modes, comprising:

a first oscillator that generates a first reference frequency;

a second oscillator that generates a second reference frequency that is lower than said first reference frequency;

a first wireless circuit that communicates with said first oscillator;

a second wireless circuit that communicates with said second oscillator; and

a shutdown module that shuts down said first wireless circuit and said first oscillator and operates said second oscillator and said second wireless circuit during said low power mode, and that operates said first oscillator and said first wireless circuit during said active mode, wherein the wireless device at least one of transmits and receives data during the active mode.

124. (Previously presented) The wireless device of Claim 123 further comprising a medium access control (MAC) device that includes said shutdown module.

125. (Previously presented) The wireless device of Claim 123 wherein said first oscillator includes a crystal oscillator and said second oscillator includes a semiconductor oscillator.

126. (Previously presented) The wireless device of Claim 123 further comprising a voltage supply that supplies a first voltage level to said first oscillator and a second voltage level that is less than said first voltage level to said second oscillator.

127. (Previously presented) The wireless device of Claim 126 wherein said voltage supply includes a first voltage supply that supplies said first voltage level to said first wireless circuit, and a second voltage supply that supplies said second voltage level to said second wireless circuit.

128. (Previously presented) The wireless device of Claim 127 wherein said shutdown module transitions from said first voltage level to said second voltage level when transitioning from said active mode to said low power mode and transitions from said second voltage level to said first voltage level when transitioning from said low power mode to said active mode.

129. (Previously presented) The wireless device of Claim 123 wherein said first wireless circuit includes a first phase locked loop (PLL), and wherein said shutdown module shuts down said first PLL during said low power mode and operates said first PLL during said active mode.

130. (Previously presented) The wireless device of Claim 123 wherein said first wireless circuit includes at least one of a baseband processor (BBP) and/or a radio frequency (RF) transmitter.

131. (Previously presented) The wireless device of Claim 126 wherein said first voltage supply includes a first voltage regulator and said second voltage supply includes a second voltage regulator.

132. (Previously presented) The wireless device of Claim 123 wherein said shutdown module selectively calibrates said second reference frequency of said second oscillator using said first reference frequency of said first oscillator before transitioning to said low power mode.

133. (Previously presented) A system comprising the wireless device of Claim 123 and further comprising a remote device that periodically transmits a beacon, wherein said shutdown module transitions said wireless device from said low power mode to said active mode prior to receiving said beacon.

134. (Previously Presented) A wireless device with active and low power modes, comprising:

a voltage supply that supplies a first voltage level and a second voltage level that is less than said first voltage level;

a first wireless circuit;

a second wireless circuit; and

a shutdown module that shuts down said first wireless circuit and operates said second wireless circuit in said low power mode and transitions from said first voltage level to said second voltage level when transitioning from said active mode to

said low power mode, and that operates said first wireless circuit in said active mode and transitions from said second voltage level to said first voltage level when transitioning from said low power mode to said active mode, wherein the wireless device at least one of transmits and receives data during the active mode.

135. (Previously presented) The wireless device of Claim 134 wherein said voltage supply includes a first voltage supply that supplies said first voltage level and a second voltage supply that supplies said second voltage level.

136. (Previously presented) The wireless device of Claim 134 further comprising a medium access control (MAC) device that includes said shutdown module.

137. (Previously presented) The wireless device of Claim 134 further comprising:

a first oscillator that communicates with said first wireless circuit, that receives said first voltage level and that generates a first reference frequency; and

a second oscillator that receives said second voltage level, that communicates with said second wireless circuit, that consumes less power than said first oscillator and that generates a second reference frequency.

138. (Previously presented) The wireless device of Claim 137 wherein said first oscillator includes a crystal oscillator and said second oscillator includes a semiconductor oscillator.

139. (Previously presented) The wireless device of Claim 137 wherein said shutdown module shuts down said first oscillator and operates said second oscillator during said low power mode and operates said first oscillator during said active mode.

140. (Previously presented) The wireless device of Claim 134 wherein said first wireless circuit includes a first phase locked loop (PLL), and wherein said shutdown module shuts down said first PLL during said low power mode and operates said first PLL during said active mode.

141. (Previously presented) The wireless device of Claim 134 wherein said first wireless circuit includes at least one of a baseband processor (BBP) and/or a radio frequency (RF) transmitter.

142. (Previously presented) The wireless device of Claim 135 wherein said first voltage supply includes a first voltage regulator and said second voltage supply includes a second voltage regulator.

143. (Previously presented) The wireless device of Claim 137 wherein said shutdown module selectively calibrates said second reference frequency of said second oscillator using said first reference frequency of said first oscillator before transitioning to said low power mode.

144. (Previously presented) A system comprising the wireless device of Claim 134 and further comprising a remote device that periodically transmits a beacon, wherein said shutdown module transitions said wireless device from said low power mode to said active mode prior to receiving said beacon.

145. (Previously Presented) A wireless device with active and low power modes, comprising:

a first oscillator that generates a first reference frequency;

a second oscillator that consumes less power than said first oscillator and that generates a second reference frequency;

a first voltage supply that supplies a first voltage level to said first oscillator;

a second voltage supply that supplies a second voltage level that is less than said first voltage level to said second oscillator;

a first wireless circuit that communicates with said first oscillator;

a second wireless circuit that communicates with said second oscillator; and

a shutdown module that shuts down said first wireless circuit and said first oscillator in said low power mode, operates said second wireless circuit and said second oscillator in said low power mode and transitions from said first voltage level to said second voltage level when transitioning from said active mode to said low power mode, and that operates said first wireless circuit and said first oscillator in said active mode and transitions from said second voltage level to said first voltage level when

transitioning from said low power mode to said active mode, wherein the wireless device at least one of transmits and receives data during the active mode.

146. (Previously presented) The wireless device of Claim 145 wherein said first wireless circuit further comprises:

a radio frequency (RF) transceiver that communicates with said first oscillator and said first voltage supply; and

a baseband processor (BBP) that communicates with said first oscillator and said first voltage supply and that performs RF mixing, wherein said shutdown module shuts down said RF transceiver and said BBP during said low power mode.

147. (Previously presented) The wireless device of Claim 145 further comprising a medium access control (MAC) device that includes said shutdown module.

148. (Previously presented) The wireless device of Claim 145 wherein said first oscillator includes a crystal oscillator and said second oscillator includes a semiconductor oscillator.

149. (Previously presented) The wireless device of Claim 146 wherein said RF transceiver includes a first phase locked loop (PLL), and wherein said shutdown module shuts down said first PLL during said low power mode and operates said first PLL during said active mode.

150. (Currently Amended) The wireless device of Claim ~~146~~ 149 wherein said BBP includes a second PLL, and wherein said shutdown module shuts down said second PLL during said low power mode and operates said second PLL during said active mode.

151. (Previously presented) The wireless device of Claim 145 wherein said first voltage supply includes a first voltage regulator and said second voltage supply includes a second voltage regulator.

152. (Previously presented) The wireless device of Claim 145 wherein said shutdown module selectively calibrates said second reference frequency of said second oscillator using said first reference frequency of said first oscillator before transitioning to said low power mode.

153. (Previously presented) A system comprising the wireless device of Claim 145 and further comprising a remote device for periodically transmitting a beacon, wherein said shutdown module transitions said wireless device from said low power mode to said active mode prior to receiving said beacon.

154. (Currently Amended) A wireless device with active and low power modes, comprising:

oscillating means for generating a first reference frequency and a second reference frequency that is lower than said first reference frequency;

transceiving means that communicates with said oscillating means for transmitting and receiving radio frequency (RF) signals;

processing means that communicates with said oscillating means and said transceiving means for performing RF mixing; and

shutdown means for shutting down said processing means and said transceiving means in said low power mode and transitioning from said first frequency to said second frequency when transitioning from said active mode to said low power mode, and for operating said processing means and said transceiving means in said active mode and transitioning from said second frequency to said first frequency when transitioning from said low power mode to said active mode,

wherein a medium access control (MAC) device includes said shutdown means.

155. (Previously presented) The wireless device of Claim 154 wherein said oscillating means includes first oscillating means for generating said first reference frequency and second oscillating means that consumes less power than said first oscillating means for generating said second reference frequency.

156. (Cancelled)

157. (Previously presented) The wireless device of Claim 155 wherein said first oscillating means includes a crystal oscillator and said second oscillating means includes a semiconductor oscillator.

158. (Previously presented) The wireless device of Claim 154 further comprising supply means for supplying a first voltage level during said active mode and a second voltage level during said low power mode.

159. (Previously presented) The wireless device of Claim 158 wherein said supply means includes first supply means for supplying said first voltage level and second supply means for supplying said second voltage level.

160. (Previously presented) The wireless device of Claim 158 wherein said shutdown means transitions from said first voltage level to said second voltage level when transitioning from said active mode to said low power mode, and transitions from said second voltage level to said first voltage level when transitioning from said low power mode to said active mode.

161. (Previously presented) The wireless device of Claim 154 wherein said transceiving means includes first phase locking means for locking phase, and wherein said shutdown means shuts down said first phase locking means during said low power mode and operates said first phase locking means during said active mode.

162. (Currently Amended) The wireless device of Claim ~~154~~ 161 wherein said processing means includes second phase locking means for locking phase, and wherein said shutdown means shuts down said second phase locking means during

said low power mode and operates said second phase locking means during said active mode.

163. (Previously presented) The wireless device of Claim 159 wherein said first supply means includes first voltage regulating means for regulating voltage and said second supply means includes second voltage regulating means for regulating voltage.

164. (Previously presented) The wireless device of Claim 155 wherein said shutdown means selectively calibrates said second reference frequency of said second oscillating means using said first reference frequency of said first oscillating means before transitioning to said low power mode.

165. (Previously presented) A system comprising the wireless device of Claim 154 and further comprising remote means for periodically transmitting a beacon, wherein said shutdown means transitions said wireless device from said low power mode to said active mode prior to receiving said beacon.

166. (Currently Amended) A wireless device with active and low power modes, comprising:

supply means for supplying a first voltage level and a second voltage level that is lower than said first voltage level;

transceiving means for transmitting and receiving radio frequency (RF) signals;

processing means that communicates with said transceiving means for performing RF mixing; and

shutdown means for shutting down said processing means and said transceiving means in said low power mode and transitioning from said first voltage level to said second voltage level when transitioning from said active mode to said low power mode, and for operating said processing means and said transceiving means in said active mode and transitioning from said second voltage level to said first voltage level when transitioning from said low power mode to said active mode,

wherein a medium access control (MAC) device includes said shutdown means.

167. (Previously presented) The wireless device of Claim 166 wherein said supply means includes first supply means for supplying said first voltage level and a second supply means for supplying said second voltage level.

168. (Cancelled)

169. (Previously presented) The wireless device of Claim 166 further comprising first oscillating means for generating a first reference frequency, that communicates with said processing means and said transceiving means and that receives said first voltage level.

170. (Previously presented) The wireless device of Claim 169 further comprising second oscillating means for generating a second reference frequency, that

receives said second voltage level and that consumes less power than said first oscillating means.

171. (Previously presented) The wireless device of Claim 170 wherein said first oscillating means includes a crystal oscillator and said second oscillating means includes a semiconductor oscillator.

172. (Previously presented) The wireless device of Claim 166 wherein said transceiving means includes first phase locking means for locking phase, and wherein said shutdown means shuts down said first phase locking means during said low power mode and operates said first phase locking means during said active mode.

173. (Currently Amended) The wireless device of Claim ~~166~~ 172 wherein said processing means includes second phase locking means for locking phase, and wherein said shutdown means shuts down said second phase locking means during said low power mode and operates said second phase locking means during said active mode.

174. (Previously presented) The wireless device of Claim 167 wherein said first supply means includes first regulating means for regulating voltage and said second supply means includes second regulating means for regulating voltage.

175. (Previously presented) The wireless device of Claim 170 wherein said shutdown means selectively calibrates said second reference frequency of said second

oscillating means using said first reference frequency of said first oscillating means before transitioning to said low power mode.

176. (Previously presented) A system comprising the wireless device of Claim 166 and further comprising remote means for periodically transmits a beacon, wherein said shutdown means transitions said wireless device from said low power mode to said active mode prior to receiving said beacon.

177. (Currently Amended) A wireless device with active and low power modes, comprising:

first oscillating means for generating a first reference frequency;

second oscillating means for generating a second reference frequency that is lower than said first frequency;

first supply means for supplying a first voltage level to said first oscillating means;

second supply means for supplying a second voltage level that is less than said first voltage level to said second oscillating means; and

shutdown means for shutting down said first oscillating means in said low power mode and transitioning from said first voltage level to said second voltage level when transitioning from said active mode to said low power mode, and for operating said first oscillating means in said active mode and transitioning from said second voltage level to said first voltage level when transitioning from said low power mode to

said active mode, wherein the wireless device at least one of transmits and receives data during the active mode,

wherein a medium access control (MAC) device includes said shutdown means.

178. (Previously presented) The wireless device of Claim 177 further comprising:

transceiving means that communicates with said first oscillating means for transmitting and receiving radio frequency (RF) signals; and

processing means that communicates with said first oscillating means and said transceiving means for performing RF mixing, wherein said shutdown means shuts down said transceiving means and said processing means during said low power mode and operates said processing means and said transceiving means during said active mode.

179. (Cancelled)

180. (Previously presented) The wireless device of Claim 177 wherein said first oscillating means includes a crystal oscillator and said second oscillating means includes a semiconductor oscillator.

181. (Previously presented) The wireless device of Claim 178 wherein said transceiving means includes first phase locking means for locking phase, and wherein

said shutdown means shuts down said first phase locking means during said low power mode and operates said first phase locking means during said active mode.

182. (Currently Amended) The wireless device of Claim ~~178~~ 181 wherein said processing means includes second phase locking means for locking phase, and wherein said shutdown means shuts down said second phase locking means during said low power mode and operates said second phase locking means during said active mode.

183. (Previously presented) The wireless device of Claim 177 wherein said first supply means includes first regulating means for regulating voltage and said second supply means includes second regulating means for regulating voltage.

184. (Previously presented) The wireless device of Claim 177 wherein said shutdown means selectively calibrates said second reference frequency of said second oscillating means using said first reference frequency of said first oscillating means before transitioning to said low power mode.

185. (Previously presented) A system comprising the wireless device of Claim 177 and further comprising remote means for periodically transmitting a beacon, wherein said shutdown means transitions said wireless device from said low power mode to said active mode prior to receiving said beacon.

186. (Previously Presented) A wireless device with active and low power modes, comprising:

first oscillating means for generating a first reference frequency;

second oscillating means for generating a second reference frequency that is lower than said first reference frequency;

first wireless circuit means for communicating with said first oscillating means;

second wireless circuit means for communicating with said second oscillating means; and

shutdown means for shutting down said first wireless circuit and said first oscillating means and operating said second oscillating means and said second wireless circuit during said low power mode and for operating said first oscillating means and said first wireless circuit during said active mode, wherein the wireless device at least one of transmits and receives data during the active mode.

187. (Previously presented) The wireless device of Claim 186 further comprising a medium access control (MAC) device that includes said shutdown means.

188. (Previously presented) The wireless device of Claim 186 wherein said first oscillating means includes a crystal oscillator and said second oscillating means includes a semiconductor oscillator.

189. (Previously presented) The wireless device of Claim 186 further comprising supply means that supplies a first voltage level to said first oscillating means and a second voltage level that is lower than said first voltage level to said second oscillating means.

190. (Previously presented) The wireless device of Claim 189 wherein said supply means includes first supply means for supplying said first voltage level to said first wireless circuit, and second supply means for supplying said second voltage level to said second wireless circuit.

191. (Previously presented) The wireless device of Claim 190 wherein said shutdown means transitions from said first voltage level to said second voltage level when transitioning from said active mode to said low power mode and transitions from said second voltage level to said first voltage level when transitioning from said low power mode to said active mode.

192. (Previously presented) The wireless device of Claim 186 wherein said first wireless circuit includes first phase locking means for locking phase, and wherein said shutdown means shuts down said first phase locking means during said low power mode and operates said first phase locking means during said active mode.

193. (Previously presented) The wireless device of Claim 186 wherein said first wireless circuit includes at least one of processing means for performing RF mixing and/or transmitting means for transmitting RF signals.

194. (Previously presented) The wireless device of Claim 189 wherein said first supply means includes first regulating means for regulating voltage and said second supply means includes second regulating means for regulating voltage.

195. (Previously presented) The wireless device of Claim 186 wherein said shutdown means selectively calibrates said second reference frequency of said second oscillating means using said first reference frequency of said first oscillating means before transitioning to said low power mode.

196. (Previously presented) A system comprising the wireless device of Claim 186 and further comprising remote means for periodically transmitting a beacon, wherein said shutdown means transitions said wireless device from said low power mode to said active mode prior to receiving said beacon.

197. (Previously Presented) A wireless device with active and low power modes, comprising:

supply means for supplying a first voltage level and a second voltage level that is lower than said first voltage level;

first wireless circuit means for performing a first function;

second wireless circuit means for performing a second function; and

shutdown means for shutting down said first wireless circuit means and operating said second wireless circuit in said low power mode and transitioning from said first voltage level to said second voltage level when transitioning from said active mode to said low power mode, and for operating said first wireless circuit means in said active mode and transitioning from said second voltage level to said first voltage level when transitioning from said low power mode to said active mode, wherein the wireless device at least one of transmits and receives data during the active mode.

198. (Previously presented) The wireless device of Claim 197 wherein said supply means includes first supply means for supplying said first voltage level and second supply means for supplying said second voltage level.

199. (Previously presented) The wireless device of Claim 197 further comprising a medium access control (MAC) device that includes said shutdown means.

200. (Previously presented) The wireless device of Claim 197 further comprising:

first oscillating means for generating a first reference frequency, that communicates with said first wireless circuit means and that receives said first voltage level; and

second oscillating means for generating a second reference frequency, that receives said second voltage level, that communicates with said second wireless circuit means, and that consumes less power than said first oscillating means.

201. (Previously presented) The wireless device of Claim 200 wherein said first oscillating means includes a crystal oscillator and said second oscillating means includes a semiconductor oscillator.

202. (Previously presented) The wireless device of Claim 200 wherein said shutdown means shuts down said first oscillating means and operates said second oscillating means during said low power mode and operates said first oscillating means during said active mode.

203. (Previously presented) The wireless device of Claim 197 wherein said first wireless circuit means includes a first phase locking means for locking phase, and wherein said shutdown means shuts down said first phase locking means during said low power mode and operates said first phase locking means during said active mode.

204. (Previously presented) The wireless device of Claim 197 wherein said first wireless circuit means includes at least one of processing means for providing RF mixing and/or transmitting means for transmitting RF signals.

205. (Previously presented) The wireless device of Claim 197 wherein said first supply means includes first regulating means for regulating voltage and said second supply means includes second regulating means for regulating voltage.

206. (Previously presented) The wireless device of Claim 200 wherein said shutdown means selectively calibrates said second reference frequency of said second oscillating means using said first reference frequency of said first oscillating means before transitioning to said low power mode.

207. (Previously presented) A system comprising the wireless device of Claim 197 and further comprising remote means for periodically transmits a beacon, wherein said shutdown means transitions said wireless device from said low power mode to said active mode prior to receiving said beacon.

208. (Previously Presented) A wireless device with active and low power modes, comprising:

first oscillating means for generating a first reference frequency;

second oscillating means for consuming less power than said first oscillating means and for generating a second reference frequency;

first supply means for supplying a first voltage level to said first oscillating means;

second supply means for supplying a second voltage level that is lower than said first voltage level to said second oscillating means;

first wireless circuit means for communicating with said first oscillating means;

second wireless circuit means for communicating with said second oscillating means; and

shutdown means for shutting down said first wireless circuit means and said first oscillating means in said low power mode, operating said second wireless circuit means and said second oscillating means in said low power mode and transitioning from said first voltage level to said second voltage level when transitioning from said active mode to said low power mode, and for operating said first wireless circuit means and said first oscillating means in said active mode and transitioning from said second voltage level to said first voltage level when transitioning from said low power mode to said active mode, wherein the wireless device at least one of transmits and receives data during the active mode.

209. (Previously presented) The wireless device of Claim 208 wherein said first wireless circuit means further comprises:

transceiving means that communicates with said first oscillating means and said first supply means for transmitting and receiving; and

processing means that communicates with said first oscillating means and said first supply means for performing RF mixing, wherein said shutdown means shuts down said transceiving means and said processing means during said low power mode.

210. (Previously presented) The wireless device of Claim 208 further comprising a medium access control (MAC) device that includes said shutdown means.

211. (Previously presented) The wireless device of Claim 208 wherein said first oscillating means includes a crystal oscillator and said second oscillating means includes a semiconductor oscillator.

212. (Previously presented) The wireless device of Claim 209 wherein said transceiving means includes a first phase locking means for locking phase, and wherein said shutdown means shuts down said first phase locking means during said low power mode and operates said first phase locking means during said active mode.

213. (Currently Amended) The wireless device of Claim ~~209~~ 212 wherein said processing means includes second phase locking means for locking phase, and wherein said shutdown means shuts down said second phase locking means during said low power mode and operates said second phase locking means during said active mode.

214. (Previously presented) The wireless device of Claim 208 wherein said first supply means includes first regulating means for regulating voltage and said second supply means includes second regulating means for regulating voltage.

215. (Previously presented) The wireless device of Claim 208 wherein said shutdown means selectively calibrates said second reference frequency of said second oscillating means using said first reference frequency of said first oscillating means before transitioning to said low power mode.

216. (Previously presented) A system comprising the wireless device of Claim 208 and further comprising remote means for periodically transmitting a beacon, wherein said shutdown means transitions said wireless device from said low power mode to said active mode prior to receiving said beacon.

217. (Currently Amended) A method for operating wireless device with active and low power modes, comprising:

generating a first reference frequency and a second reference frequency that is lower than said first reference frequency;

transmitting and receiving RF signals using a radio frequency (RF) transceiver;

performing RF mixing using a baseband processor (BBP);

shutting down said BBP and said RF transceiver in said low power mode and transitioning from said first frequency to said second frequency when transitioning from said active mode to said low power mode <u>with a medium access control (MAC) device</u>; and

operating said BBP and said RF transceiver in said active mode and transitioning from said second frequency to said first frequency when transitioning from said low power mode to said active mode.

218. (Previously presented) The method of Claim 217 further comprising:

generating said first reference frequency using a first oscillator; and

generating said second reference frequency using a second oscillator that consumes less power than said first oscillator.

219. (Previously presented) The method of Claim 218 wherein said first oscillator includes a crystal oscillator and said second oscillator includes a semiconductor oscillator.

220. (Previously presented) The method of Claim 217 further comprising supplying a first voltage level during said active mode and a second voltage level during said low power mode.

221. (Previously presented) The method of Claim 219 further comprising:

transitioning from said first voltage level to said second voltage level when transitioning from said active mode to said low power mode; and

transitioning from said second voltage level to said first voltage level when transitioning from said low power mode to said active mode.

222. (Previously presented) The method of Claim 217 wherein said RF transceiver includes a first phase locked loop (PLL), and further comprising shutting down said first PLL during said low power mode and operating said first PLL during said active mode.

223. (Currently Amended) The method of Claim ~~217~~ 222 wherein said BBP includes a second PLL, and further comprising shutting down said second PLL during said low power mode and operating said second PLL during said active mode.

224. (Previously presented) The method of Claim 218 further comprising selectively calibrating said second reference frequency using said first reference frequency before transitioning to said low power mode.

225. (Previously presented) The method of Claim 217 further comprising:

periodically transmitting a beacon; and

transitioning said wireless device from said low power mode to said active mode prior to receiving said beacon.

226. (Currently Amended) A method for operating a wireless device with active and low power modes, comprising:

supplying a first voltage level and a second voltage level that is lower than said first voltage level;

transmitting and receiving RF signals using a radio frequency (RF) transceiver;

performing RF mixing using a baseband processor (BBP);

shutting down said BBP and said RF transceiver in said low power mode and transitioning from said first voltage level to said second voltage level when transitioning from said active mode to said low power mode with a medium access control (MAC) device; and

operating said BBP and said RF transceiver in said active mode and transitioning from said second voltage level to said first voltage level when transitioning from said low power mode to said active mode.

227. (Previously presented) The method of Claim 226 further comprising generating a first reference frequency.

228. (Previously presented) The method of Claim 227 further comprising generating a second reference frequency.

229. (Previously presented) The method of Claim 226 wherein said RF transceiver includes a first phase locked loop (PLL), and further comprising shutting down said first PLL during said low power mode and operating said first PLL during said active mode.

230. (Currently Amended) The method of Claim ~~226~~ 229 wherein said BBP includes a second PLL, and further comprising shutting down said second PLL during said low power mode and operating said second PLL during said active mode.

231. (Previously presented) The method of Claim 230 further comprising selectively calibrating said second reference frequency using said first reference frequency before transitioning to said low power mode.

232. (Previously presented) The method of Claim 226 further comprising:

periodically transmitting a beacon; and

transitioning said wireless device from said low power mode to said active mode prior to receiving said beacon.

233. (Currently Amended) A method for operating a wireless device with active and low power modes, comprising:

generating a first reference frequency using a first oscillator;

generating a second reference frequency that is lower than said first frequency using a second oscillator;

supplying a first voltage level to said first oscillator;

supplying a second voltage level that is lower than said first voltage level to said second oscillator;

shutting down said first oscillator in said low power mode and transitioning from said first voltage level to said second voltage level when transitioning from said active mode to said low power mode with a medium access control (MAC) device; and

operating said first oscillator in said active mode and transitioning from said second voltage level to said first voltage level when transitioning from said low power mode to said active mode, wherein the wireless device at least one of transmits and receives data during the active mode.

234. (Previously presented) The method of Claim 233 further comprising:

transmitting and receiving RF signals using a radio frequency (RF) transceiver;

performing RF mixing a baseband processor (BBP); and

shutting down said RF transceiver and said BBP during said low power mode and operating said BBP and said RF transceiver during said active mode.

235. (Previously presented) The method of Claim 234 wherein said RF transceiver includes a first phase locked loop (PLL), and further comprising shutting down said first PLL during said low power mode and operating said first PLL during said active mode.

236. (Currently Amended) The method of Claim ~~234~~ 235 wherein said BBP includes a second PLL, and further comprising shutting down said second PLL during said low power mode and operating said second PLL during said active mode.

237. (Previously presented) The method of Claim 233 further comprising selectively calibrating said second reference frequency of said second oscillator using said first reference frequency of said first oscillator before transitioning to said low power mode.

238. (Previously presented) The method of Claim 233 further comprising:

periodically transmitting a beacon; and

transitioning said wireless device from said low power mode to said active mode prior to receiving said beacon.

239. (Previously Presented) A method for operating a wireless device with active and low power modes, comprising:

generating a first reference frequency using a first oscillator for a first wireless circuit;

generating a second reference frequency using a second oscillator that is less than said first reference frequency for a second wireless circuit;

shutting down said first wireless circuit and said first oscillator and operating said second oscillator and said second wireless circuit during said low power mode; and

operating said first oscillator and said first wireless circuit during said active mode, wherein the wireless device at least one of transmits and receives data during the active mode.

240. (Previously presented) The method of Claim 239 further comprising supplying a first voltage level to said first oscillator and a second voltage level that is less than said first voltage level to said second oscillator.

241. (Previously presented) The method of Claim 240 further comprising:

transitioning from said first voltage level to said second voltage level when transitioning from said active mode to said low power mode; and

transitioning from said second voltage level to said first voltage level when transitioning from said low power mode to said active mode.

242. (Previously presented) The method of Claim 239 wherein said first wireless circuit includes a first phase locked loop (PLL), and further comprising shutting down said first PLL during said low power mode and operating said first PLL during said active mode.

243. (Previously presented) The method of Claim 239 wherein said first wireless circuit includes at least one of a baseband processor (BBP) and/or a radio frequency (RF) transmitter.

244. (Previously presented) The method of Claim 239 further comprising selectively calibrating said second reference frequency of said second oscillator using said first reference frequency of said first oscillator before transitioning to said low power mode.

245. (Previously presented) The method of Claim 239 further comprising:

periodically transmitting a beacon; and

transitioning said wireless device from said low power mode to said active mode prior to receiving said beacon.

246. (Previously Presented) A method for operating a wireless device with active and low power modes, comprising:

supplying a first voltage level and a second voltage level that is lower than said first voltage level;

shutting down a first wireless circuit and operating a second wireless circuit in said low power mode and transitioning from said first voltage level to said second voltage level when transitioning from said active mode to said low power mode; and

operating said first wireless circuit in said active mode and transitioning from said second voltage level to said first voltage level when transitioning from said low power mode to said active mode, wherein the wireless device at least one of transmits and receives data during the active mode.

247. (Previously presented) The method of Claim 246 further comprising:

generating a first reference frequency using a first oscillator; and

generating a second reference frequency using a second oscillator that consumes less power than said first oscillator and that.

248. (Previously presented) The method of Claim 247 further comprising shutting down said first oscillator and operating said second oscillator during said low power mode and operates said first oscillator during said active mode.

249. (Previously presented) The method of Claim 248 wherein said first wireless circuit includes a first phase locked loop (PLL), and further comprising shutting down said first PLL during said low power mode and operating said first PLL during said active mode.

250. (Previously presented) The method of Claim 248 wherein said first wireless circuit includes at least one of a baseband processor (BBP) and/or a radio frequency (RF) transmitter.

251. (Previously presented) The method of Claim 246 further comprising selectively calibrating said second reference frequency of said second oscillator using said first reference frequency of said first oscillator before transitioning to said low power mode.

252. (Previously presented) The method of Claim 246 further comprising:

periodically transmitting a beacon; and

transitioning said wireless device from said low power mode to said active mode prior to receiving said beacon.

253. (Previously Presented) A method for operating a wireless device with active and low power modes, comprising:

generating a first reference frequency using a first oscillator;

generating a second reference frequency using a second oscillator that consumes less power than said first oscillator;

supplying a first voltage level to said first oscillator;

supplying a second voltage level that is lower than said first voltage level to said second oscillator;

shutting down a first wireless circuit and said first oscillator in said low power mode, operating a second wireless circuit and said second oscillator in said low power mode and transitioning from said first voltage level to said second voltage level when transitioning from said active mode to said low power mode; and

operating said first wireless circuit and said first oscillator in said active mode and transitioning from said second voltage level to said first voltage level when transitioning from said low power mode to said active mode, wherein the wireless Ethernet network device at least one of transmits and receives data during the active mode.

254. (Previously presented) The method of Claim 253 wherein said first wireless circuit further comprises:

a radio frequency (RF) transceiver that communicates with said first oscillator and said first voltage supply; and

a baseband processor (BBP) that communicates with said first oscillator and said first voltage supply and that performs RF mixing, wherein said shutdown module shuts down said RF transceiver and said BBP during said low power mode.

255. (Previously presented) The method of Claim 254 wherein said RF transceiver includes a first phase locked loop (PLL), and further comprising shutting down said first PLL during said low power mode and operating said first PLL during said active mode.

256. (Currently Amended) The method of Claim ~~254~~ 255 wherein said BBP includes a second PLL, and further comprising shutting down said second PLL during said low power mode and operating said second PLL during said active mode.

257. (Previously presented) The method of Claim 253 further comprising selectively calibrating said second reference frequency of said second oscillator using said first reference frequency of said first oscillator before transitioning to said low power mode.

258. (Previously presented) The method of Claim 253 further comprising:

periodically transmitting a beacon;

transitioning said wireless device from said low power mode to said active mode prior to receiving said beacon.